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CONSULTING ENGINEERS

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September 13, 1984 (Revised October 26, 1984)
Project No. 84272 OC

B & V Construction Company
25301 Novi Road
Novi, Michigan 48050

ATTN: Mr. Donald J. Treder

RE: Clay Cap Evaluation
BASF - Wyandotte Landfill
Riverview, Michigan

Dear Mr. Treder:

This letter presents the results of evaluation tests on a mixture of Bag Nos. 6 and 11 of the silty clay material being used as a clay cap for the above referenced project. The bag samples were obtained from the approximate locations shown on Figure 1 from Wayne County Sewage Abatement Site at Goddard and Moran in Taylor, Michigan.

Test results on a mixture of Bag Nos. 6 and 11 material consisted of Modified Proctor, sieve and hydrometer analysis, Atterberg limits and permeability. The results of the proctor, sieve analysis and Atterberg limits are presented on the attached Figures 2, 3 and 4. These results indicate that the combined bag material has a "CL" designation according to the Unified Classification System, and is essentially the same as material previously approved for use as a clay cap.

Three permeability tests were performed on samples of the silty clay that were prepared and compacted in brass liners (3-inch long and 1-3/8-inch in diameter). The soil was compacted to a density of approximately 90 percent of the Modified Proctor value at different moisture contents. The permeability test results are as follows:

Liner No.	Remolded Density (pcf)	Percent Compaction*	Percent Moisture	Coefficient of Permeability (cm/sec)
1	105.3	90.0	13.5	6.8×10^{-8}
2	104.3	90.1	15.9	5.9×10^{-8}
3	105.0	89.7	20.0	5.8×10^{-8}

*Based on a maximum Modified Proctor density value of 117.0 pcf at an optimum moisture content of 15.8 percent.

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The results of the evaluation tests indicate that the mixture of Bag Nos. 6 and 11 materials has a permeability coefficient of less than 1×10^{-7} cm/sec, and is therefore considered suitable for use as a clay cap.

If you have any questions about this letter or the attached data, please call.

Very truly yours,

NEYER, TISEO & HINDO, LTD.

D. Nona

D. Nona, P.E.

DN/alm
Attachments

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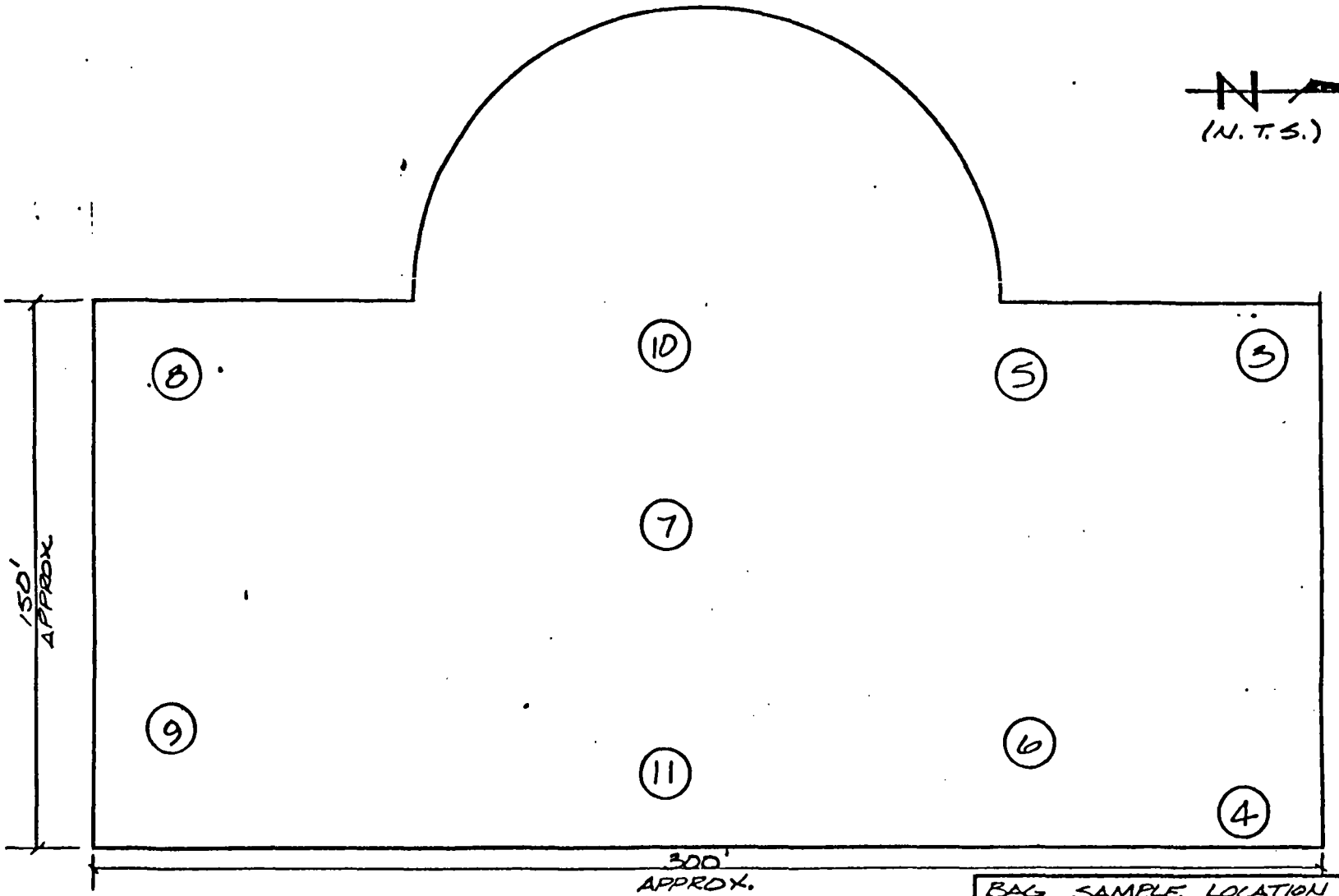

LEGEND:

(L) APPROXIMATE LOCATION OF BAG SAMPLES OBTAINED FROM WAYNE COUNTY SEWAGE ABATEMENT. SITE AT GODDARD AND MORAN IN TAYLOR, MICHIGAN. ALL SAMPLES OBTAINED BETWEEN ELEVATIONS 586' TO 595'

BAG SAMPLE LOCATION PLAN

CLAY CAP EVEVATION BASE
WYANDOTTE LANDFILL
RIVER VIEW, MICHIGAN

NTH NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS
30999 TEN MILE RD. · FARMINGTON HILLS, MI 48024

PROJECT NO. [illegible]	DRAWN BY: JEL	DATE: 9. [illegible]
SCALE: 1" = [illegible]	CHECKED BY:	SHEET 1 OF 1

FIG. " 1

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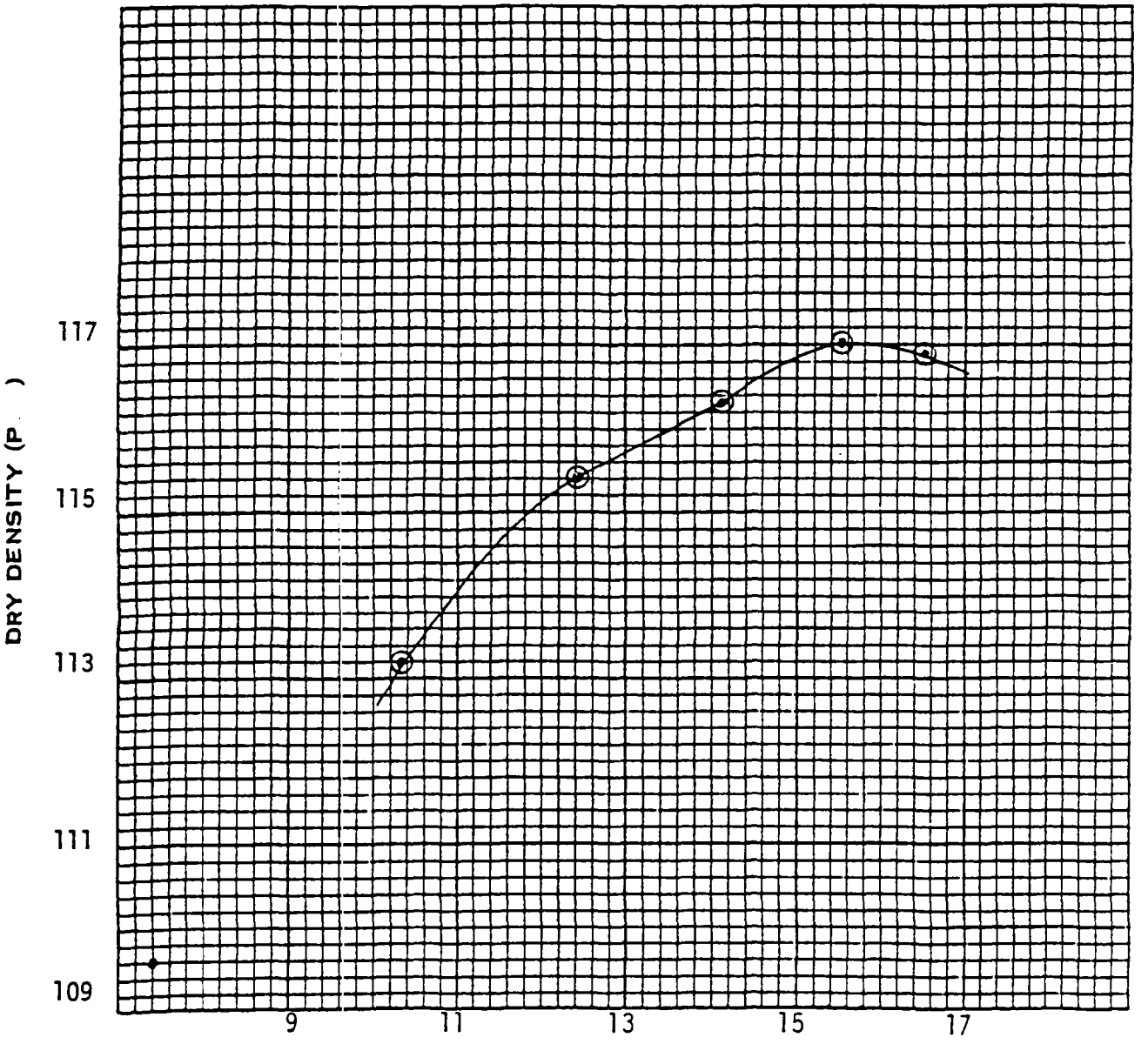
MOISTURE - DENSITY RELATIONS

PROJECT NO. 84272 PROJECT: BASF Wyandotte Company Landfill, Riverview, Michigan
Sample Source: BASF Wyandotte Company Landfill, Riverview, Michigan
BAG SAMPLE NO. 6 & 11 SAMPLE DEPTH between Elev. 586 & 595
SAMPLE DESCRIPTION Light brown silty clay
METHOD OF COMPACTION ASTM D-1557 Method A
MOLD: NO. B DIA. 4.0 IN., HT. 4.584 IN., VOLUME .0333 CU. FT., WT. 9.29 LBS.
TESTED BY: S. Westrick CHECKED BY: E. Waldecker DATE: 8/17/84



MAXIMUM DRY DENSITY 117.0 PCF OPTIMUM MOISTURE CONTENT 15.8 %
REMARKS:

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Figure 2

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GRAIN SIZE DISTRIBUTION CURVE

PROJECT NO. 84272 LAB SAMPLE NO. _____ SOURCE BASF Wyandotte Company Landfill, Riverview, Michigan
SAMPLE LOCATION BASF Wyandotte Company Landfill, Riverview, MI FOR BASF Wyandotte Company Landfill, Riverview, Michigan
BORING NO. _____ FIELD SAMPLE NO. Bags 6 & 11 SAMPLE DEPTH _____ SAMPLE ELEV. between Elev. 586 & 595
SAMPLE DESCRIPTION Brown and Gray Silty Clay with Trace of Sand,
DATE SAMPLED _____ BY _____ DATE TESTED RSL BY EW CHECKED BY 8/21/84

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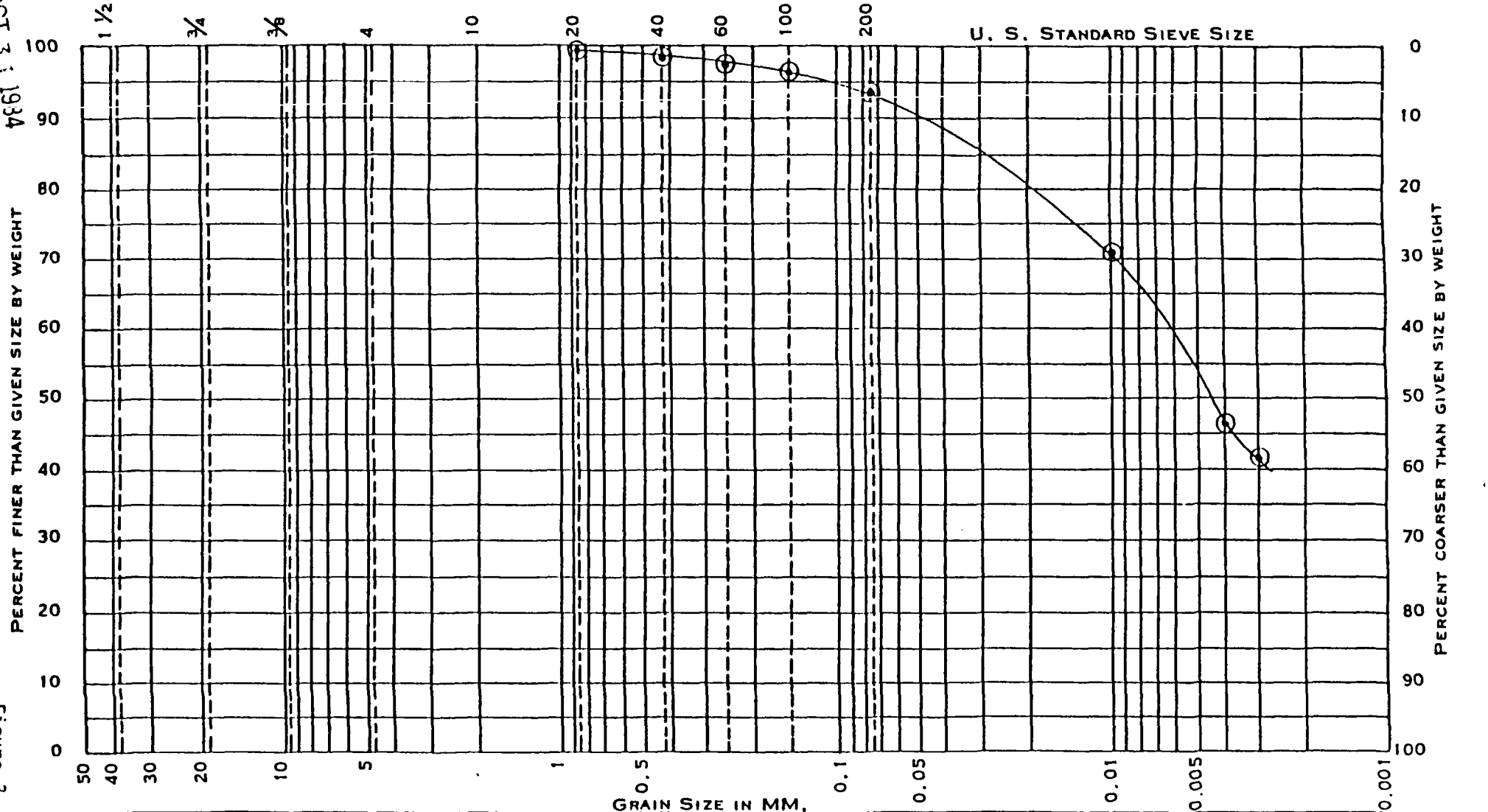

Figure 3